

# Hydrodynamic and X-ray Modelling of a Supernova Remnant Expanding in a Wind-Blown Bubble

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## Abstract

Kes 27 is a mixed-morphology or thermal composite supernova remnant (SNR), which shows X-ray emission from both an outer shell structure and within the interior. Chandra data from 2003 show two incomplete shell-like features in the northeastern half (Chen et al. 2008, hereafter CSSL08), an outer X-ray arc and an inner harder X-ray region. The morphology was explained by CSSL08 as a SNR expanding within a pre-existing cavity, with a density gradient increasing from west to east. In this poster we will present hydrodynamic simulations aimed at reproducing the X-ray morphology of this remnant, followed by a computation of the X-ray emission, and comparison to observations. In the process, we will also illustrate the general hydrodynamic and X-ray properties of supernova remnants evolving in wind-blown cavities.